

Panel Discussion Notes

The following notes were taken during the individual panel discussions.

Panel 3 Cost/Benefit Trade-Off Issues

Chairperson Susan Powers, Clarkson University
 Members Arturo Keller, University of California, Santa Barbara
 John Sheehan, National Renewable Energy Laboratory
 Brendan Dooher, Lawrence Livermore National Laboratory
 Linda Fernandez, University of California, Riverside
 Elisa Lynch, Bluewater Network
 Amanda Lavigne, Clarkson University

Sheet 1

Themes

- How to quantify costs/benefits
- Cost/Benefits — at what time scale(s)
- What question should we really be addressing
- Once we define costs (risks) how do we decide which ones to prioritize?
 - time-scales
 - geographic scales

Sheet 2

Alkylates — HF/H₂SO₄
 — 100% fossil dependence.

Global Warming
 — Impacts on Agriculture?
 If using biomass?
 — Biomass Global Warming

Land use changes with EtOH
 *technology benefits to help?
 — Deforestation?
 — Pesticides
 — Ag runoff—entrophication ?
 * economic forces?

*Sheet 3*Environmental Issues (cont.)

Devil is in details with LCA

What are underlying assumptions?

General LCA impact categories

- ozone depletion
- acidification (Acid Rain)
- human health risk
 - cancer
 - other
- water resource
 - odor/taste
- fossil fuel resources
- ecological health
- noise
- radiation

Sheet 4

LCA is a Decision Support Tool

- Risk Management vs. Risk Assessment
 - what are cost/benefits?
 - define issues
 - not limited to LCA framework
 - costs? (risks?)
 - benefits?
 - timeframes?
 - what scale?
 - Region—Pacific Coast
 - Statewide
 - Nationwide
 - Smaller/Larger
- Boundaries for data used?
 - Industry will choose most cost-effective process
 - average may be an over estimation.

*Sheet 5*Economic Impacts

- prices effect on public
- Incentives \pm
- Long term investments
- Informed DM
 - surplus
 - questions
 - stakeholders
- Sensitivity analysis

Technology Issues

- fuel combustion efficiency
- conservation
- EtOH technologies — old/vs. new ... need to improve
- need for Nitrogen fertilizer. (energy sink)
- Co-product market issues
- Bio-engineered crops

*Sheet 6*How to use LCA

- Help Decision Makers to balance dynamics of decision
- Need to understand decision context and stakeholder issues
- Implementations of assumptions involved in DM process
 - need stakeholders involved in process
 - iterative Process

Sheet 7

- Costs
 - input costs (subsidies, taxes)
 - economics of scale
- Alternative Fuels
 - fuel cell tech.
- Indirect subsidies
 - national defense/gulf (?)
- Valuation of environmental. costs and benefits

*Sheet 8*Diversify Fuel Sources

- Regional flexibility in gasoline composition.
- Differences in air quality
- Price to reflect timing and scale of use by region (internalize health and environ. extem.)
- Environmental. and health issues vary regionally

Vehicle Retirement Programs

- Lower emissions
 - Energy conservation
 - Low Emission Vehicle Promotion Programs
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*Sheet 9*Cost Effectiveness

- How clean is clean?
- Cost to reach standards
- Public response (WTP)
- Public behavior/price elasticity

Value of Train Wreck

- Changes in behavior
 - Bring issues to public?
 - Political consequences
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Sheet 10

- How to transition out of MTBE in short term?
- Short-term scale: CA
 - Conservation of fuel
 - Not interrupt supply
 - Quantity
 - *Cost cap (AFA = alternative future analysis)
 - Educate decision makers (attempt?)
 - Invest in biomass fuels
 - Postpone MTBE phase-out (or ratchet down)
 - consider the consequences
- *Determine difference between sink (?) and future costs
 - GW impacts and cleanup (environmental liabilities of cont. use)

Sheet 11

Short Term

- obtain oxygen waiver (settle the issue)
- screening LCA
- define safety issues of HF?
- multi-stakeholder discussion groups
 - transparency of information
 - education
 - broad public discussion
 - involve long-term discussions beginnings

Mid Term

- Performance-based fuel regulations (FLEXIBILITY in formulations and use)
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*Sheet 12**Research Needs*

- Cost cap
- Consequence analysis of MTBE phase-out
- Transition costs
- Screening LCA
- Integrated Assessment
- Long-term energy policy

Panel 3 - Summary Notes

The following notes were taken during the panel discussion groups' report to the large group about lessons learned.

Sheet 1

Themes

- How to quantify costs/benefits
- Cost/Benefits — at what time scale(s)
- What question should we really be addressing
- Once we define costs (risks) how do we decide which ones to prioritize?
 - time-scales
 - geographic scales

Sheet 2

- How to transition out of MTBE in short term?
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 - *Determine difference between sink (?) and future costs
 - GW impacts and cleanup (environmental. liabilities of continued use)

Sheet 3

Short Term

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- Performance-based fuel regulations (FLEXIBILITY in formulations and use)

*Sheet 4**Research Needs*

- Cost cap
- Consequence analysis of MTBE phase-out
- Transition costs
- Screening LCA
- Integrated Assessment
- Long-term energy policy